Controller Pilot Data Link Communications (CPDLC) Program Support

Controller-Pilot Data Link Communications (CPDLC) will supplement many of today's routine voice transmissions with digital data communication messages.

CPDLC opens the way for transmitting a wealth of new information that will significantly alter the way air traffic is managed from predeparture through landing, improving flight safety and efficiency, and potentially saving the aviation industry billions of dollars.

For decades, air traffic controllers have used voice communications with aircraft through VHF analog radios over the FAA's national network of air/ground (A/G) transceivers to provide air traffic control (ATC) service.

A/G communications are required to support all phases of flight from the coordination of aircraft movement on the airport surface, including gate areas and coordination of departures and arrivals in terminal airspace; to the coordination needed to support the cruise phase of flight. Furthermore, A/G communications are required to ensure aircraft separation, to transmit advisories and clearances, and to provide aviation weather services. The existing voice communication system continues to serve as the U.S. requirement for controller-pilot communications today; however, the FAA and the international aviation community have recognized for years that these communication systems are approaching the saturation point in many locations.

The limitations of the current A/G voice communications system will increasingly constrain the controller's ability to optimize air traffic flow as volume grows. These constraints will be a major contributor to the aviation gridlock that is projected to occur around 2005 unless action is taken to avert such a problem.

Over the past several years, the FAA has evolved a comprehensive plan for building an air traffic management (ATM) system. This system will support future global flight planning, aircraft operation, and ATC services through the introduction of advanced communications, navigation, and surveillance technologies.

A key feature of the future ATM will be the use of CPDLC data communications as a primary means for exchanging aeronautical information and delivering ATC services.

- Reduced Ground Delays for Departing Aircraft
  Standard clearances and repetitive messages can be sent using simplified CPDLC messages.

- Decreased Voice Frequency Congestion CPDLC
  Alleviates voice frequency congestion, thus making the voice radio consistently available for time-critical clearance delivery.

- More Efficient Control of Sector Traffic
  The use of CPDLC allows more efficient control of sector traffic even when the number of departure and arrival aircraft increase.

- Expanded Communications Capabilities
  Distributing communications tasks to all members of the control team permits controllers to act as coordinated and flexible team decision makers.

- Increased Margin of Safety
  The use of CPDLC will decrease the ambiguous, incomplete, and garbled messages associated with voice transmission. Requests for repeats or clarification are less with CPDLC than with voice alone.

For further information on the benefits of Controller-Pilot Data Link ATC Communications in terminal and en route airspace contact:

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System Efficiency